Biospheric Sciences Branch Highlights
March-April 2001

** Imhoff presents Remote Sensing/Carbon Cycle Science in the Context of the Kyoto Protocol

Dr. Marc Imhoff gave an invited plenary talk at the Xth Brazilian Remote Sensing Symposium in Foz do Iguacu, Brazil, April 25th on "Remote Sensing tools for Carbon Cycle Science in the Context of the Kyoto Protocol or Carbon Related International Treaties". The talk was attended by the head of the Brazilian Space Agency, a Code Y NASA Headquarters Program Manager, and scientists, and policy makers from around the world. The talk was well received as it discussed tools for measuring carbon sources and sinks which could be used for both science investigations and treaty compliance. Imhoff covered a suite of NASA EOS, ESSP, and international sensors including Laser, multi-spectral, and radar based systems for terrestrial, marine, and atmospheric applications. Dr. Imhoff also discussed the importance of low frequency radar systems for future scientific investigations siting his own research and that of others working in that new and developing field. No politics of the KP were discussed.

** Second Workshop in Support of NASA Carbon Cycle Science Initiative held at Goddard March 20-22, 2001

The NASA Carbon Cycle Initiative Team held its second workshop, March 20-22, here at Goddard in Building 28. The goals of the workshop were to develop a set of proposed NASA activities to support the observational requirements defined in the first workshop. These observational requirements include atmospheric CO2 concentrations, land biomass and productivity, and air-sea CO2 fluxes. The activities defined in the second workshop included technology development leading to new missions and science support for achieving research goals. The research goals include i) quantifying global carbon sources and sinks ii) understanding processes underlying global carbon fluxes and iii) predicting carbon fluxes given future global change scenarios. The workshop was attended by members of the carbon science community and representatives from various NASA Centers (JPL, Ames, Kennedy), from NASA HQ (Kaye, Wickland, Marra, Gutman, Chatfield) and from other Federal Agencies (NOAA, DOE, USDA). Candidate science missions and associated costs and timelines for support and development were discussed. The Initiative Team is incorporating the input from the workshop into a plan and preparing for a third workshop to discuss the plan with the science community May 2-4 at GSFC.

**** Second Landsat Data Continuity Mission Workshop**

A second workshop on the Landsat Data Continuity Mission (LDCM) was held on April 23 - 24 in St. Louis, MO, in conjunction with the American Society of Photogrammetry and Remote Sensing (ASPRS) Annual Meeting. The workshop was a public forum held as a follow-up to an initial LDCM workshop conducted in January at USGS HQ in Reston, VA. The main objectives were to review revisions to an LDCM Data Specification, to solicit feedback on the revisions, and to present expectations for an LDCM request for procurement from NASA and its partner in the Landsat program, the USGS. Ninety-eight people registered for the workshop and the audience was weighted towards aerospace industry representatives. The data specification revisions met with general approval although a number of missing pieces were identified. The public discussion was rather muted, but greater interest and intensity was expressed in a subsequent sequence of meetings between representatives of potential bidders and the NASA / USGS LDCM formulation team.

**** National Research Council Remote Sensing Workshop**

Several Code 900 scientists participated in a workshop on "Remote Sensing and Basic Research: The Changing Environment" sponsored by the National Research Council (NRC). The workshop was organized by the Steering Committee on Space Applications and Commercialization of the NRC Space Studies Board and was held last Tuesday and Wednesday at the National Academy of Sciences Building in Washington, DC. The Steering Committee is studying the implications of commercial remote sensing from the perspective of Earth science research. This week's workshop was the second in a series of three workshops planned by the Steering Committee. The Steering Committee intends to write a report summarizing their findings following the third workshop.

During the workshop Jim Irons, Code 923, participated in a panel on "Remote Sensing and Basic Research: the Perspective of Basic Research." Chuck McClain, Code 971, served on a panel on "Lessons Learned from Government, Commercial, and Science Interactions."

**** Discussions with Walter Reed Army Institute of Research re: collaboration on malaria re-emergence in South Korea**

Assaf Anyamba (Code 923) held discussions with Dr. Joel C. Gaydos, MD, MPH, Director of Public Health Practices, DoD Global Emerging Infections Surveillance & Response System (DoD-GEIS), Division of Preventive Medicine, Walter Reed Army Institute of Research. He is interested in collaborating with the GIMMS group of the Biospheric Sciences Branch through the existing GSFC/Walter Reed MOU. The purpose of this collaboration is to study the re-emergence of malaria in South Korea and its

threat to US forces. Their group would like GIMMS to provide collaborative expertise on remote sensing to this initiative.

**** AGU-sponsored "Biogeosciences at the Threshold" Workshop held March 21-22, 2001**

Jon Ranson attended an AGU-sponsored Workshop entitled "Biogeosciences at the Threshold" held at the Belmont Conference Center in Elkridge, Maryland on March 21 and 22. The purpose of this workshop was to further consider the scientific scope of the new Biogeosciences Section of AGU and to develop strategies for long term success of the new section. The results of the workshop will be specific recommendations for approaches and activities that would enhance interdisciplinary activities and involvement of young biogeoscientists in AGU. Discussion also included the resources and opportunities within AGU for advancing particular research areas such as through convening Chapman conferences.

**** NASA Scientists meet with Defense Tactical Response Agency**

Dr. Elizabeth Middleton and her Vegetation Fluorescence Team (comprised of NASA/GSFC, USDA/ARS, and SSAI scientists) gave a presentation to management personnel at the Defense Tactical Response Agency (DTRA) in Herndon, VA on 4/13/01. The presentation provided background information on the capabilities of using evolving fluorescence technologies to monitor environmental impacts on vegetation, and the potential for use with specific plant species as detectors of negative impacts by chemical agents in the soils.

**** Technical Review Committee Meeting for the NASA Minority grant to the U. of Puerto Rico at Mayaguez**

Darrel Williams headed the Technical Review Committee that traveled to Puerto Rico to review the NASA Minority grant program there. The committee also consisted of Drs. Marc Imhoff (Code 923) and Jonathan Rall (Code 924), Dr. Ross Hinkle of Kennedy Space Center, (a long term member of the committee), and Jay Feuquay of USGS EDC. Jay is the Data Acquisition manager for Landsat 7 and needed to go to Puerto Rico to inspect the UPR ground receiving station that will soon be acquiring Landsat 7 data (in addition to Radarsat, SeaWIFS, and AVHRR), so he was asked to serve double duty by sitting on the Committee.

UPR is off and running with their second five year grant, and all is going well. The Marine Sciences group was the beneficiary of NOAA by receiving a decommissioned 125 ft. NOAA ship that provides a significant improvement over their 75 ft. old rust bucket when it comes to conducting seagoing R&D

activities. They had just returned from a two week cruise in the Caribbean, and we got to board the ship. Thus, the University of Puerto Rico's presence in the Caribbean Region is formidable given their robust satellite data receiving capability, coupled with their seafaring capability. They also continue to do cutting edge development of sensor materials.

The committee was also granted an exit interview with the interim President of the UPR.

**** Ranson guest scientist at Step Star Network's Young Astronaut program**

Jon Ranson was a guest scientist on Step Star Network's Young Astronaut program on April 23, 2001. The Young Astronaut program is a space oriented educational course given to 4th-6th graders via live television hook up in their classrooms. Ranson presented information and results from the EOS Terra Mission and answered student's questions during the half hour broadcast.